Indiana
DEPARTMENT OF EDUCATION
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Working Together for Student Success

Introduction to Indiana's Academic Standards for Computer Science

Indiana's Academic Standards for Computer Science allows for students to be prepared in the ever-changing computer science areas providing inquiry-based, hands-on experiences based on two components: Concepts and Practices. These standards are to be implemented in the 2016-2017 school year. The expectation is for students to work through the standards in multi-subject areas. As students move through grade levels, they will work with and experience the standards at those grade bands (K-2, 3-5, and 6-8). The standards are based on the five core concepts: Computing Devices and Systems, Networking and Communication, Data and Information, Programs and Algorithms, Impact and Culture.

Data and Information (DI)	Content Connector
3-5.DI.1 Understand and use the basic steps in algorithmic problem solving (e.g., problem statement and exploration, examination of sample instances, design, implementation, and testing).	**3-5.DI.1.a.1** Understand and use the basic steps in algorithmic problem solving (e.g., problem statement and exploration, examination of sample instances, design, implementation, and testing).
3-5.DI.2 Develop a simple understanding of an algorithm (e.g., search, sequence of events, or sorting) using computer-free exercises.	**3-5.DI.2.a.1** Develop a simple understanding of an algorithm (e.g., search, sequence of events, or sorting) using computer-free exercises.
3-5.DI.3 Demonstrate how a string of bits can be used to represent alphanumeric information and how 1's and 0's represent information.	
3-5.DI.4 Describe how a simulation can be used to solve a problem.	**3-5.DI.4.a.1** Describe how a simulation can be used to solve a problem.
3-5.DI.5 Understand the connections between computer science and other fields.	**3-5.DI.5.a.1** Understand the connections between computer science and other fields.

Computing Devices and Systems (CD)	Content Connector
3-5.CD.1 Demonstrate proficiency with keyboards and other input and output devices.	**3-5.CD.1.a.1** Demonstrate proficiency with keyboards and other input and output devices.
3-5.CD.2 Understand the pervasiveness of computers and computing in daily life (e.g., voicemail, downloading videos and audio files, microwave ovens, thermostats, wireless Internet, mobile computing devices, GPS systems).	**3-5.CD.2.a.1** Understand the pervasiveness of computers and computing in daily life (e.g., voicemail, downloading videos and audio files, microwave ovens, thermostats, wireless Internet, mobile computing devices, GPS systems).

3-5.CD.3 Apply troubleshooting strategies for identifying simple hardware and software problems that may occur during use.	**3-5.CD.3.a.1** Apply troubleshooting strategies for identifying simple hardware and software problems that may occur during use
3-5.CD.4 Recognize that computers model intelligent behavior (as found in robotics, speech and language recognition, and computer animation).	

Programs and Algorithms (PA)	**Content Connector**
3-5.PA.1 Use technology resources (e.g., calculators, data collection probes, mobile devices, videos, educational software, and web tools) for problem-solving and self-directed learning, and general-purpose productivity tools and peripherals to support personal productivity, remediate skill deficits, facilitate learning, and individual/collaborative writing, communication, and publishing activities.	**3-5.PA.1.a.1** Use technology resources (e.g., calculators, data collection probes, mobile devices, videos, educational software, and web tools) for problem solving and self-directed learning.
3-5.PA.2 Use digital tools to gather, manipulate, and modify data for use by a program.	
3-5.PA.3 Implement problem solutions using a block-based visual programming language.	

Networking and Communication (NC)	**Content Connector**
3-5.NC.1 Use online resources (e.g., email, online discussions, collaborative web environments) to participate in collaborative problem-solving activities for the purpose of developing solutions or products.	**3-5.NC.1.a.1** Use online resources (e.g., email, online discussions, collaborative web environments) to participate in collaborative problem-solving activities for the purpose of developing solutions or products.
3-5.NC.2 Use productivity technology tools (e.g., word processing, spreadsheet, presentation software) for individual and collaborative writing, communication, and publishing activities.	**3-5.NC.2.a.1** Use productivity technology tools (e.g., word processing, spreadsheet, presentation software) for individual and collaborative writing, communication, and publishing activities.

Impact and Culture (IC)	
3-5.IC.1 Discuss basic issues related to responsible use of technology and information, and the consequences of inappropriate use.	**3-5.IC.1.a.1** Discuss basic issues related to responsible use of technology and information, and the consequences of inappropriate use.

3-5.IC.2 Identify the impact of technology (e.g., social networking, cyber bullying, mobile computing and communication, web technologies, cyber security, and virtualization) on personal life and society.	**3-5.IC.2.a.1** Identify the impact of technology (e.g., social networking, cyber bullying, mobile computing and communication, web technologies, cyber security, and virtualization) on personal life and society.
3-5.IC.3 Evaluate the accuracy, relevance, appropriateness, comprehensiveness, and biases that occur in electronic information sources.	**3-5.IC.3.a.1** Evaluate the accuracy, relevance, appropriateness, comprehensiveness, and biases that occur in electronic information sources.
3-5.IC.4 Understand ethical issues that relate to computers and networks (e.g., equity of access, security, privacy, copyright, and intellectual property).	**3-5.IC.4.a.1** Understand ethical issues that relate to computers and networks (e.g., equity of access, security, privacy, copyright, plagiarism and intellectual property).